

## REMARKS

Favorable reconsideration of the application is respectfully requested.

Claims 1-5, 7 and 10-15 were rejected under 35 U.S.C. 103(a) on the grounds of obviousness from Leshem in view of Espy, and further in view of Dekoning, et al. Claim 1 recites “a module bypass circuit board including an optical input/output connector for outputting electrical signals from the module as light signals and for inputting light signals into the module as electrical signals.” The Examiner acknowledged that Leshem does not teach a module bypass circuit board including an optical input/output connector for outputting electrical signals from the module as light signals and for inputting light signals into the module as electrical signals. Espy was cited as disclosing a module bypass circuit board including an optical input/output connector for outputting electrical signals from the module as light signals and for inputting light signals into the module as electrical. The Examiner referred to Espy at page 2, lines 5-23; Fig. 1, item 40; and page 6, lines 7-16.

At page 2, lines 5-23, Espy discloses a dynamically upgradeable disk array chassis including disk drives connected to serial busses, and a shunt connected to the busses, as shown in Fig. 1. At page 6, lines 7-16, Espy discloses that the shunt 40 is provided along a Fibre Channel loop, and that the shunt 40 may be a port bypass circuit. However, Espy does not teach, disclose or suggest that the shunt includes an optical input/output connector for outputting electrical signals as light signals and for inputting light signals as electrical signals, as is claimed. In Fig. 1 and from page 6, line 24, to page 7, line 8,

Espy teaches that communication between the shunts 40 in the disk arrays is via a single cable 18, which is disclosed as being preferably a twinax cable 18 which includes four wire conductors. The cable 18 is connected to a cable connector 52, which is connected to a diplexer 50 to transmit and receive high frequency signals from the shunt 40. There is no teaching, disclosure or suggestion in Espy of an optical input/output connector for outputting electrical signals as light signals and for inputting light signals as electrical signals.

Dekoning et al. was cited as disclosing a controller providing a communication path between a CPU and storage devices through a storage device bypass circuit board. It is respectfully submitted that Dekoning et al. also does not teach, disclose or suggest that the shunt includes an optical input/output connector for outputting electrical signals as light signals and for inputting light signals as electrical signals, as is claimed. It is therefore respectfully submitted that Claims 1-5, 7 and 10-15 are novel and inventive over Leshem, Espy, and Dekoning, et al., taken individually or together, and that the rejection of Claims 1-5, 7 and 10-15 on the grounds of obviousness from Leshem in view of Espy, and further in view of Dekoning, et al. should be withdrawn.

Claims 6, 16, 19-24 and 28-34 were rejected under 35 U.S.C. 103(a) on the grounds of obviousness from Leshem in view of Espy, and further in view of Dekoning, et al. and Harvey. Harvey was cited as disclosing a module including a storage device bypass board connector for each of the storage device bypass circuit boards with an opening between each connector to permit air flow between the connectors for cooling purposes, and a disk drive bypass circuit board associated with each disk drive and



including a disk drive connector at one edge thereof and a bypass board connector at another edge thereof, each disk drive being plugged into the disk drive connector on the disk drive bypass circuit board. However, Harvey also does not teach, disclose or suggest that the shunt includes an optical input/output connector for outputting electrical signals as light signals and for inputting light signals as electrical signals, as is claimed. Claim 19 also recites “a module bypass circuit board including an optical input/output connector for outputting electrical signals from the module as light signals and for inputting light signals into the module as electrical signals.” It is therefore respectfully submitted that Claims 1-5, 7 and 10-15 are novel and inventive over Leshem, Espy, Dekoning, et al., and Harvey, taken individually or together, and that the rejection of Claims 6, 16, 19-24 and 28-34 on the grounds of obviousness from Leshem in view of Espy, and further in view of Dekoning, et al. and Harvey, should be withdrawn.

Claims 8, 9, 17, 18, 25-27, 35 and 36 were rejected under 35 U.S.C. 103(a) on the grounds of obviousness from Leshem in view of Espy, and Dekoning, et al. and further in view of Harvey and Kimura et al. Kimura et al. was cited as teaching that each drive bypass circuit board is relatively flat. It is respectfully submitted that Kimura et al. also does not teach, disclose or suggest that the shunt includes an optical input/output connector for outputting electrical signals as light signals and for inputting light signals as electrical signals, as is claimed. It is therefore respectfully submitted that Claims 8, 9, 17, 18, 25-27, 35 and 36 are novel and inventive over Leshem, Espy, Dekoning, et al., Harvey, and Kimura et al., taken individually or together, and that the rejection of Claims 8, 9, 17, 18, 25-27, 35 and 36 on the grounds of obviousness from Leshem in view of

Espy, and Dekoning, et al. and further in view of Harvey and Kimura et al. should be withdrawn.

In light of the foregoing amendment and remarks, it is respectfully submitted that the application should now be in condition for allowance, and an early favorable action in this regard is respectfully requested.

Respectfully submitted,

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